UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,439	12/05/2001	Ye-Yi Wang	M61.12-0399	3367

27366	7590	12/28/2005

WESTMAN CHAMPLIN (MICROSOFT CORPORATION)
SUITE 1400 - INTERNATIONAL CENTRE
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402-3319

EXAMINER
SKED, MATTHEW J

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/007,439	WANG ET AL.
	Examiner	Art Unit	
	Matthew J. Sked	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *13 October 2005*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,7-9 and 11-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *17-32* is/are allowed.

6) ☒ Claim(s) *1,7-9 and 11* is/are rejected.

7) ☒ Claim(s) *12-16* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   The objection to claims 3 and 7 are withdrawn in view of the amendments filed

10/13/05.

2.   Applicant's arguments with respect to claim 1 have been considered but are moot

in view of the new ground(s) of rejection.

3.   Applicant's arguments, filed 10/13/05, with respect to claims 17, 20, 25 and 32

have been fully considered and are persuasive. The rejection of claims 17-32 has been

withdrawn.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 7-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gavalda et al. ("Growing Semantic Grammars") in view of Wang ("A Robust Parser

for Spoken Language Understanding"), cited by the applicant, and taken in further view

of Russell (U.S. Pat. Pub. 2002/0156616A1), cited in the previous Office Action.

        As per claim 1, Gavalda teaches a method of building a learned grammar for an

application, comprising:

generating a semantic schema for the application, the semantic schema having

associated semantic constraints (developer creates a domain model with the aid of the

DM editor, page 452, section 3.1, 1st paragraph);

generating a template grammar based on the semantic schema such that the

template grammar inherits the semantic constraints associated with the semantic

schema (generates grammar rules from a rule template derived from the domain model,

page 452, section 3.1, 2nd paragraph);

building the learned grammar by parsing training expressions using the template

grammar (uses grammar rules to create parse trees from unseen expressions and uses

user interaction to adapt the grammar, page 453, section 3.2.1), by:

obtaining a training expression (sentences must inherently be obtained to

process, page 453, section 3.2.1); and

parsing the training expression to produce a parse result, displaying an

abstraction of the parse result and receiving a user input, indicative of a user

acceptance of the parse result (presents ranked hypotheses of parse trees to the user

which allows the user to choose a rephrase of the original parse, page 453, section

3.2.1).

Gavalda does not teach building a context free grammar.

Wang teaches a method of building a context free grammar from semantic class

rules (section 2, 1st paragraph).

It would have been obvious to one of ordinary skill in the art at the time of

invention to use the algorithm of Gavalda to build context free grammars as taught by

Wang because context free grammars are easier to maintain and update and can be used to automatically construct an efficient parser.

Gavalda and Wang do not teach that the user's input is a direct user correction to the parse result.

Russell teaches a grammar authoring system that allows the user to add or modify expansions of existing rules hence correcting them (paragraph 22).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Gavalda and Wang so the user's input is a direct user correction to the parse result as taught by Russell because it would ensure that the grammar is correctly build to the designer's specifications.

6.   As per claim 7, Gavalda teaches prior to displaying an abstraction, identifying as ambiguities a plurality of different potential alignments of words in the training expression with preterminals in the template CFG (identifies multiple hypotheses, section 3.2.1).

7.   As per claim 8, Gavalda teaches providing an output query to a user, the output query prompting a clarifying user input to disambiguate the ambiguities and receiving the clarifying user input (user selects correct alignment from multiple hypotheses, section 3.2.1).

8.   As per claim 9, Gavalda teaches providing the potential alignments as a plurality of user selectable alignment options (multiple hypotheses, section 3.2.1).

9.   As per claim 11, Gavalda teaches the correction input annotates at least one anchor point that is a known correct alignment between the training expression and a

preterminal in the template grammar (annotates the new rule with the learning episode, section 3.2.1).

Allowable Subject Matter

10.   Claims 17-32 are allowed.

11.   The following is a statement of reasons for the indication of allowable subject matter: Claims 17, 20, 25 and 32, while all different in scope, each teaches obtaining an annotated expression by receiving a user annotation input annotating the training expression directly against the semantic schema to provide at least one anchor point that is a known correct alignment between a portion of the training expression and the template CFG or semantic schema. None of the prior art on record teaches this limitation.

12.   Claims 12-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13.   Claims 18, 19, 21-24 and 26-31 are allowable because they limit the material to which they refer.

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bennett (U.S. Pat. Pub. 2003/0050772A1) teaches a system for

automatically developing a grammar and presenting the grammar to the user for correction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Sked whose telephone number is (571) 272-7627. The examiner can normally be reached on Mon-Fri (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MS
12/22/05

SUSAN MCFADDEN
PRIMARY EXAMINER